IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:	Confirmation No. 5491
Yuan Che Hsieh et al.	Art Unit: 2163
Serial No.: 10/670,545	Examiner: Alford W. Kindred
Filed: September 24, 2003	Customer No. **25235**
For: **SYSTEM AND METHOD FOR IMPROVING RESOLUTION OF CHANNEL DATA**	Docket No. INFN0002

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
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APPEAL BRIEF UNDER 37 CFR § 41.37

I. Real Party in Interest

InfoNow Corporation
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II. Related Appeals and Interferences

No other appeals or interferences are currently known to Appellants that will directly affect, be directly affected by, or have a bearing on the decision to be rendered by the Board of Patent Appeals and Interferences in the present appeal.

III. Status of Claims

Claims 1-17, 33-36, and 40-49 are pending in the application, with claims 18-32 and 37-39 being cancelled. No claims have been allowed. The rejection of claims 1-17, 33-36, and 40-49 are the subject of this appeal.

IV. Status of Amendments

In response to a non-final Office Action mailed September 13, 2006, Appellants filed an Amendment on November 17, 2006 that amended claim 42 and added claims 45-49. These claim amendments and additional claims have been entered and examined.

Claims 1-17, 33-36, and 40-49 are provided in the attached Claims Appendix.

V. Summary of Claimed Subject Matter

Claims 1, 33, and 42 are independent claims that are being appealed.

Claim 1 is directed to a system for managing a product distribution channel with a plurality of channel participants. Figure 1 illustrates a representative system useful for this purpose showing a distribution channel that includes a producer 101 and channel participants including customers 102, resellers 103, and distributors 104. With numerous channel participants, a problem that arises is that it is "difficult to match captured information to information used by sales/marketing personnel, producers, and other channel participants" as noted in paragraph [0006] of Appellants' specification. Hence, the invention provides a system that can manage such a system more effectively, and as noted in paragraph [0008], one of the participants may be "imprecisely identified" such as by misspelling of a company name, use of a subsidiary name rather than a parent company name, or the like. To resolve this problem, spatial "records are combined with captured channel information to specifically identify the channel participant who is imprecisely identified."

Claim 1 calls for "one or more reference record databases" and "one or more reference records within the reference record databases, each reference record providing an association between business information and spatial data for a specific channel participant." Figure 1 shows a database that is labeled "dB," and Figure 4 illustrates a portion of a system according to claim 1 that includes a database with a reference record 403 that is shown to include business information such as a company name and address as well as spatial data such as a latitude and longitude (e.g., geocode or geo-coding data). Paragraph [0041] discusses the contents of the reference records 403 including noting that each corresponds to a business entity or channel

participant such as a customer, reseller, or distributor and "contains precise information about the associated business entity including precise address information."

Claim 1 further calls for "transaction data related to at least one channel participant," and transaction data is shown in Figure 1 with bubbles labeled "i" and discussed in paragraphs [0016] and [0017] as being "various types of information captured by channel participants" and containing "some identification of the customer name, and some locality or location information." Paragraph [0017] also states that "the present invention does not require that the customer name and/location [sic] information be entirely accurate or high precision" as one "feature of the invention is an ability to compensate for common errors and deficiencies in the transaction record by improving the resolution of the data."

The system of claim 1 further includes "a candidate identification mechanism for determining more than one candidate reference record from one of the reference record databases using spatial and business data derived from the transaction data." This mechanism may be provided in or by the resolver 105 shown in Figure 1 whose functionality is explained in more detail with reference to Figure 3. This candidate identification mechanism may also be provided by the matching algorithm shown in Figure 4. Paragraph [0024] explains operation of the resolver 105 to parse a transaction record that may include imprecise identification of a participant to obtain business data such as "business name information" and spatial data such as "location information." Paragraph [0024] states that resolution is improved by the resolver 105 acting to use this spatial and business data derived from the transaction data to "identify or select" candidate records "from a pre-established reference record database." (e.g., by geo-coding the parsed spatial data and then retrieving matching records from the reference record database). The operation of the matching algorithm of Figure 4 is described in paragraph [0040] and may include one or more of steps 1, 2, 5, 6, and 7 to determine more than one candidate reference record from the reference record database based on the transaction data.

The system of claim 1 further includes "a matching mechanism for matching a subset of the candidate reference records to the transaction data." Hence, the system includes components to first identify all possible matches in a reference record pool and then to narrow these potential

matching candidates to a subset based on the transaction data. The matching mechanism is provided in some embodiments by the resolver 105 of the system of Figure 1 and/or by the lexical matching component of the system of Figure 4. For example, paragraph [0024] describes the resolver 105 as acting to perform "lexical processing of business name and/or address information obtained from a transaction record" and "matching the transaction record to a reference record" such that "the present invention uses both spatial analysis/matching and lexical analysis/matching to create an association between a transaction record (which may contain errors) to reference records (which presumably contain fewer errors and higher resolution)." Operation of the lexical matching component of Figure 4 with relation to the system of claim 1 is provided in paragraph [0040] with step 4 in which lexical matching is provided as a specific example of how the matching mechanism of claim 1 may act to match a subset of the candidate reference records to the transaction data.

Independent claims 33 and 42 are directed to methods for identifying distribution channel participants and for resolving ambiguous transaction records, respectively, with limitations similar to that of claim 1 but presented in method form. As a result, the summary of the claimed invention provided for claim 1 is at least partially applicable to the methods of claims 33 and 42. Generally, the elements of claims 33 and 42 can be found in the operation of the resolver 105 of Figure 1 and the matching algorithm and lexical matching of Figure 4 with reference to the process shown in Figure 3 and/or in the description of operations of the systems shown in Figures 1 and 4 and process of Figure 3.

More specifically, however, claim 33 is directed to a method that includes "generating a transaction record comprising data that imprecisely identifies at least one channel participant." This transaction record may be the information shown as "i" elements in Figure 1 and by the transaction records 401 in Figure 4. Paragraph [0023] states that an "imprecisely identified participant means that through error or design, the transaction record cannot be matched with certainty to a known business entity" with uncertainty being causes by "typographical errors in the record, use of a trade name or trademark rather than the business entity name, inaccurate or missing address data, and the like." Figure 2 further provides an example of transaction records that each include one or more typographical errors or data entries that can cause uncertainty or

"imprecise identification" of a channel participant. For example, a misspelled company name or a different company name would imprecisely identify the channel participant and make matching of the data with the correct channel participant difficult.

The method of claim 33 also includes "geo-coding location data within the transaction record to determine a spatial identifier for the transaction record." An exemplary geo-coding process is described in paragraph [0026] that acts to transform location data within a transaction record such as shown in Figure 2 into a spatial identifier such as "...code or value (e.g., latitude/longitude" or a "zone of locations of any size and shape around a particular set of location information" with some embodiments providing street-level accuracy in the geo-coding process or step.

The method of claim 33 also includes "providing a reference record database comprising a plurality of reference records where each reference record comprises business information having greater precision than the transaction record and each record is associated with a spatial identifier." For example, the databases shown in Figures 1 and 4 may be provided with reference records such as record 403. The reference records are described in detail in paragraphs [0027] and [0039] and are said to include geocodes to provide a spatial identifier (e.g., latitude and longitude that provides street-level accuracy or a zone associated with a business name or other business data). Claim 33 further calls for "identifying more than one reference record in the reference record database by matching the spatial identifier of the transaction record with spatial identifiers associated with reference records." This may be done by the resolver 105 of Figure 1 or the matching algorithm of Figure 4 as discussed with reference to the system of claim 1 (e.g., see step 2 of the table in paragraph [0040]).

Claim 42 includes limitations similar to those found in claim 33 with some additional specificity. For example, the imprecise identification of the channel participant is "preventing a direct match with the business information of the one distribution channel participant to [be] made with certainty" as would be the case with the misspellings of names shown in the records of Figure 2 or the misplacement of the state code. The method of claim 42 does not require that more than one candidate record be generated as was the case in claims 1 and 33 as it calls for a

comparing step that includes selecting "one or more candidate records from the stored reference records" (see, for example, step 2 in the table of paragraph [0040]). However, claim 42 specifically calls for "lexical processing" which was not required in claims 1 and 33. Lexical processing is described in detail in steps 3 and 4 of paragraph [0040] and paragraphs [0028] and [0029] to process imprecise identification of a channel participant. Claim 42 further calls for matching to be performed "based on the lexical processing" to match "the received transaction record to one of the candidate reference records." Such matching of one record of the candidate records is described in paragraph [0040] at the end of steps 3 and 4 (e.g., selecting a record with a lexical processing score above a pre-defined threshold value or manually selecting one record from two or more candidates with higher lexical processing scores).

VI. Grounds of Rejection to be Reviewed on Appeal

1. Claims 1-17, 33-36, and 40-49 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Pat. Appl. Publ. No. 2004/0199506 ("Shaffer") in view of U.S. Pat. Appl. Publ. No. 2004/0064351 ("Mikurak").

2. Claims 40 and 41 are also rejected under 35 U.S.C. §103(a) as being unpatentable over Shaffer in view of Mikurak and further in view of U.S. Pat. No. 6,523,027 ("Underwood").

VII. Argument

Rejection of Claims 1-17, 33-36, and 40-49 Under 35 U.S.C. §103 Based on Shaffer and Mikurak is Improper

In the Office Action of February 9, 2007, claims 1-17, 33-36, and 40-49 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Pat. Appl. Publ. No. 2004/0199506 ("Shaffer") in view of U.S. Pat. Appl. Publ. No. 2004/0064351 ("Mikurak"). The February 9, 2007 Office Action was the third non-final Office Action issued after issuance of a Notice of Panel Decision from Pre-Appeal Brief Review that re-opened prosecution, and prior to the filing of a Notice of Appeal by Appellants, the Examiner had issued four Office Actions (i.e., there has been 7 Office Actions issued in this case). The rejection of claims 1-17, 33-36, and 40-49 is

traversed based on the following remarks, and Appellants request that the rejection be reversed as not properly supported.

The following discussion begins with a discussion of the Examiner's use of the Mikurak reference, and Appellants' request that the Examiner verify that it is being used properly (i.e., that it is not being used improperly for its teaching provided only in the "In-Part" portion of the CIP application that does not have a priority date early enough to be used as a reference against the pending claims). The discussion then proceeds with a general discussion of the Appellants' invention with reference to the cited references. This is followed by a discussion of independent claim 33 and then claim 1 and independent claim 42. The Examiner's arguments provided in the Response to Arguments section of the February 9, 2007 Office Action are addressed where appropriate in the following remarks.

First, as to the use of Mikurak as a 35 U.S.C. §103 reference, Appellants closely studied Mikurak and believe it fails to overcome the deficiencies of Shaffer. Further, Appellants in their November 17, 2006 Amendment protested the use of Mikurak because it is only effective as a reference for what is taught in the parent applications and not for any material added to the parent applications. Specifically, Mikurak is a continuation-in-part (CIP) application based on 4 patent applications filed in 1999. Mikurak can only be used as a reference against Appellants' claimed invention for what was presented in these parent applications because Mikurak was filed April 4, 2003, which is after Appellants' priority date of October 23, 2002 (unless a limitation in the claims is shown to have been missing in Appellants' provisional application).

With this in mind, Appellants requested that the Examiner provide citations to the detailed support found in one or more of the parent applications for the portions of Mikurak that are cited in the Office Action or to withdraw the rejections of the claims based on this reference. The Mikurak reference is nearly 200 pages long, and it would place an unreasonable burden on Applicants to verify that Mikurak is a proper 103 reference by reading each of the four parent applications. Further, three of the parent applications are not available on the public PAIR system so they may be difficult or impossible for Applicants to obtain and the fourth referenced parent is now U.S. Pat. No. 6,230,697 entitled "Integrated Internal Combustion Engine Control

System with High-Precision Emission Controls," which appears to be unrelated (listed in error on the cover of Mikurak). In the Response to Arguments section of the February 9, 2007 Office Action on page 5, the Examiner states that he is referring "to the Mikurak's invention as a whole regarding the collaborative order management of business entities...as indicated in the continuation in part applications." Appellants believe this is an improper use of a published continuation-in-part application. Specifically, the Examiner can ONLY cite or use the portion of the application that has a proper priority date and the material added to the application may be part of the "invention as a whole." Appellants believe the Examiner has not fulfilled his duty to cite material with a proper priority date because it appears that the Examiner has not taken the time to verify that each of his cited portions were properly supported in the parent applications (or, at least, has not provided citations or copies of such portions to the Appellants).

Second, this application has had a fairly long prosecution, but Appellants believe there has continued to be a disconnect between how they have been explaining their invention and what the Examiner believes Appellants are arguing as important and distinguishing features of the invention. Briefly, Appellants' invention is directed to a method for improving the resolution of input transaction or channel data so as to provide a more accurate match to previously stored reference records (which have more precise information such as a correct company name and address for a customer). This process is unique because it can take an input transactional record that has imprecision such as misspelled words, incorrect company names, errors in addressing, and other errors or input data that makes it difficult or impossible to match the input data to a reference record with any certainty (e.g., a misspelled name will not simply result in no match being found or the creation of a "new" customer). These problems are detailed in paragraphs [0004] to [0007] of Appellants' specification. A definition of "transaction information" or records is provided in paragraph [0017] that makes it clear that the inventive process does not require precision in the transaction records. Paragraphs [0020] and [0021] discuss common errors that "make precise identification of a customer difficult" and how the invention overcomes these imprecisions or errors "by using location information" "to select one or more reference records from a database of known information" (e.g., by spatial matching using location information to identify one or more businesses that may be a match for the imprecise transaction

data). Then, lexical matching is used against this smaller subset of candidate businesses or reference records to identify a single matching reference (when possible). Paragraphs [0023] to [0028] provide further detail, and this description makes it clear that imprecise or even error-filled input can be effectively used to match an input or received transaction record to a precise, known-to-be-correct reference record. None of the references cited during the prosecution of this application, including Shaffer and Mikurak, has addressed the problem of how to handle imprecise input data or have suggested that geo-code matching should be combined with the use of lexical matching to resolve a set of candidates into a single matching record. For example, how would Shaffer handle an identifier input by a user that was provided with errors? No discussion is provided in the reference, and it is likely that it would simply provide an error message or "user unknown" message and stop without overcoming such an error by finding a best match. The Response to Arguments at the top of page 6 indicates Shaffer's teaching of "inserting an additional parameter" as teaching how Shaffer would handle an error. However, the insertion of an additional parameter is never taught to be performed in response to detection of an error or imprecision or to allow matching for an imprecise data record, and no specific citation was provided by the Examiner to support this argument or assertion (i.e., where does Shaffer teach that the insertion of an additional parameter is done after the detection of imprecision or that it provides more than one candidate record?).

The Response to Arguments provided in the February 7, 2007 Office Action stated that the Examiner disagrees and states that "Shaffer combined with Mirkurak teaches the handling of imprecise input data and offers a lexical matching element to resolve candidate data." However, no citation is provided for such a statement or to show where this teaching is provided. The Response to Arguments also states that Mikurak teaches the identification of candidates from candidates in a database, but there is no mention that the data input or beginning search terms are imprecise or more than one candidate is first retrieved and then narrowed based on lexical matching. In the prior Response to Arguments found in the September 13, 2006 Office Action at the bottom of page 5 to page 6, the Examiner argued that Shaffer does teach the idea of receiving and processing imprecise data in paragraphs [0061] and [0116]. Appellants strongly disagree with the idea that Shaffer addresses imprecise input data at these citations or anywhere else. In

paragraph [0061], Shaffer teaches that once "an identifier" such as a telephone number (which is the consumer or user input or provided LKIPV or Linkage Key Input Parameter Value) is known a "merchant server" can be provided with various data by matching the identifier with one or more database records. The LKIPV or identifier is precise or error free to allow matching with certainty to various data records linked to that user or consumer. Appellants requested that the Examiner provide a citation in Shaffer that states that the LKIPV is received with errors or imprecise information and that Shaffer resolves this imprecision as called for in the pending claims. Instead, the Examiner provided no specific citations in his more recent Response to Arguments but still cites paragraph [0061] in the rejection of claim 1. In the previously cited paragraph [0116], Shaffer discusses how to handle the receipt of numerous consumer requests by inserting an additional parameter to identify the transaction, but there is no discussion that the request is imprecise or that the consumer is defined in error. Hence, this cited reference is not relevant to the handling of imprecise transactional data or records to find a best match among a number of candidate records.

Further, Appellants argued in their November 17, 2006 Amendment that Shaffer fails to discuss the receipt and processing of imprecise input in the other portions of its description. The input in Shaffer is generally LKIPVs that are defined in paragraph [0048] and none of the examples provided are "imprecise" e.g., a 10-digit telephone number is not imprecise or at least no discussion is provided of how an error would be handled. No imprecision is inserted in the Shaffer process when the LKIPV is used to determine a "Linkage Key" as explained in paragraph [0050] of Shaffer. The linkage key is a very precise value such as a telephone number or a 9 digit zip code. An overview of the Shaffer process is provided in paragraph [0056], and it can be seen that the LKIPV is provided by the consumer computer and it is then converted to the Linkage Key that is in turn used to access indexed databases to return information to the requesting consumer. Again, there is no mention that either the LKIPV or the Linkage Key may be imprecise. The examples of operation of the Shaffer system also fail to mention or even suggest problems with imprecision. See, for example, the example described in paragraph [0067] in which lat/lon coordinates are provided from the consumer browser as the LKIPV and this information is used to provide a nearest pizza chain restaurant. There is no need for, or

teaching of, resolving imprecise input data in Shaffer and, additionally, there is no need to resolve the set of pizza chains using lexical matching as distance from the input LKIPV is used to obtain a match. Further study of Shaffer, such as at paragraphs [0072], [0076], [0086] to [0088], and [0102], supports the conclusion that Shaffer's process relies on the LKIPV and the Linkage Key being precisely defined at all times and there is no discussion whatsoever of imprecise information and how to process such information. With these general differences between Appellants' invention and the primary Shaffer reference understood, it is worthwhile to discuss the specific claim language and how Shaffer and Mikurak fail to show or suggest each and every limitation as required under 35 U.S.C. §103.

Turning first to independent claim 33, Shaffer fails to teach or suggest at least the generating and the geo-coding steps of the claimed method. The generating step calls for "generating a transaction record comprising data that imprecisely identifies at least one channel participant." As discussed above, Shaffer fails to teach or suggest that its input LKIPV or any of its transaction records are imprecisely identified. In rejecting claims 1 and 33, the Office Action cites to paragraphs [0061] and [0116], but as discussed above, these paragraphs fail to mention any imprecision in the LKIPV, in other identifiers or consumer requests, or even in the Linkage Keys. Further, as discussed above, Appellants could find no suggestion that imprecision in input or linking information can be tolerated by the Shaffer process. Therefore, Appellants respectfully request that the rejection of claim 33 be withdrawn as unsupported by the references. Note, Mikurak is not cited for teaching this limitation (and fails to overcome this deficiency as discussed detail below). The Response to Arguments in the February 9, 2007 Office Action states that the generating step is shown by Shaffer's "matching of database via identifiers" but this response does not indicate that Shaffer's identifiers are imprecise.

Claims 45-47, which depend from claim 33, were added to further define what "imprecise" may mean in some embodiments, and Appellants argued in their last Amendment that each of these added limitations further distinguish the claimed method from that taught by the combination of Shaffer and Mikurak. The Office Action states that these claims were rejected for the same reasons as provided for claims 1, 2, and 33. However, claim 46 specifically calls for the imprecision to be introduced by a typographical error, and this element is not in

claims 1, 2, or 33. Claim 47 calls for the transaction record to include a business name or address information that does not match any business entity in the reference records, and these limitations are not found in claims 1, 2, or 33. Appellants do not believe these additional limitations are shown in either of the two references, and the Examiner has failed to state a prima facie case of obviousness because a specific citation has not been provided for at least claims 46 and 47.

Returning to claim 33, the references also fail to show the step of "providing a reference record database comprising a plurality of reference records where each reference record comprises business information having greater precision than the transaction record and each record is associated with a spatial identifier." Appellants could not find teaching of this step in Shaffer or Mikurak. Therefore, Appellants requested in the last Amendment that the Examiner provide a specific citation to Shaffer or Mikurak of a database with reference records having business information with "greater precision" than the transaction record and that each such record is associated with a spatial identifier. The Response to Arguments from the September 13, 2006 Office Action cites to paragraphs [0061] and [0116] of Shaffer as providing this teaching but, as discussed above, there is no teaching in these paragraphs that there is imprecision in the LKIPV. Further, there is no teaching in the cited paragraphs that the databases include more precise versions of the LKIPV. In the Response to Arguments in the February 9, 2007 Office Action, the Examiner again cited paragraphs [0061] and [0116] as well as "the reference as a whole" because Shaffer teaches "identifying the various types of data in a database." But, such identifying fails to meet the requirement that the business information has "greater precision than the transaction record." Hence, claim 33 is believed allowable for this additional reason.

Claims 48 and 49, which depend from claim 33 were added to further stress that the greater precision information includes particular fields or data that was provided in the transaction record in imprecise form (e.g., a misspelled business name may be provided with known accuracy or greater precision in the reference record and spatial identifiers based on the transaction record location information may be used to identify likely matching reference records). The use of such greater precision information in the manner claimed is not shown in

either of the references. As with claims 45-47, the Examiner failed to provide a separate cite for these additional claim limitations but, instead, simply rejected claims 48 and 49 for the same reasons as claims 1, 2, and 33, which do not include the limitations presented in claims 48 and 49. Hence, the Examiner has failed to state a proper prima facie case of obviousness, and Appellants further assert that Shaffer in view of Mikurak fails to teach or suggest these additional limitations.

Yet further and of significance to Appellants' invention as described above, the references do not show the step of claim 33 of "identifying more than one reference record...by matching the spatial identifier of the transaction record with spatial identifiers associated with reference records". The Office Action asserts that Shaffer teaches a matching mechanism as claimed in claim 1 at paragraphs [0061], [0064], and [0149]. However, there is no discussion in these paragraphs of identifying "more than one reference record." As discussed above, Shaffer is not addressing ambiguities and, instead, is a precise matching algorithm that is based on indexes that have a single match. Additionally, there is no teaching in Shaffer that the identifying of more records shall be done by matching a spatial identifier generated for a transaction record with those associated with reference records. The Office Action admits that Shaffer "does not explicitly" teach the identifying of more than one candidate reference record from the database but cites Mikurak for overcoming the deficiency of Shaffer.

Mikurak is cited at paragraphs [0222], [1332], and [1790] in the rejection of claim 1. Appellants' review of Mikurak did not show the identifying step of claim 33 and Appellants did not see a mention of matching of more than one record using spatial identifiers. In paragraph [0222], Mikurak discusses a service provider 506 in Figure 5 that provides an "open access channel" but there is no discussion of identifying more than one reference record by matching spatial identifiers. Paragraph [1332] discusses how the Mikurak technology may be used to enforce electronic rights and to control digital content over the "electronic highway" but provides no teaching of identifying records by matching spatial identifiers. In paragraph [1790], the Mikurak technology or "WAF" is described as "supporting a transaction/distribution control standard" and, again, being useful for allowing those in electronic commerce to control content. There is no teaching in the cited portions of Mikurak that seem even remotely relevant to

Appellants' invention and, particularly, the "identifying" step of claim 33. Hence, claim 33 is further allowable over the two references because each fails to teach the identifying step.

The Response to Arguments in the February 9, 2007 Office Action fails to rebut this argument or to disagree with Appellants' characterization of the Mikurak's teaching in the cited paragraphs, with the only mention of Mikurak in the Response to Arguments being at the top of page 6 arguing that it teaches "the identification of candidates from a plurality of reference record databases" without a citation and without discussion of using a spatial identifier to find more than one candidate record in a reference record database.

More generally, Mikurak fails to overcome the deficiencies of Shaffer discussed above as it provides no teaching of how imprecise input data may be processed to obtain matches to reference records (that may include greater precision information). As with Shaffer, Mikurak deals only with precise identities (e.g., customers and partners). Any component that may be arguably thought of as a candidate identification mechanism in Mikurak only deals with creating lists of candidates based on simple filters from which a user selects one. This is much different from the method of claim 33 and from the candidate identification mechanism of claim 1. Briefly, Mikurak does not teach creating candidates by applying a mix of spatial and lexical rules to imprecise transactional data or that these candidates are subsequently evaluated by a scoring algorithm to come up with a "best" match (see, for example, dependent claims 15 and 16).

Injecting any imprecision into the Mikurak process would corrupt the system, and Mikurak, as with Shaffer, does not acknowledge any ability to handle imprecise data (especially learning it and adding it to the internal database as may be the case with a learning – see claims 40 and 41). As a result, Appellants assert that not only do Shaffer and Mikurak fail to combine to teach Appellants' claimed invention, but both of these references teach away from the claimed systems and methods. Both of these references REQUIRE precise input data or precise matching to function, and hence, these references would encourage a systems designer to block input transaction records that imprecisely defined entities or includes information with spelling or other errors. Appellants' method, in contrast, does not require precision in the input and is specifically designed to handle imprecision.

Yet further, there is no motivation to combine Shaffer and Mikurak or, more significantly in this case, to modify either to arrive at the Appellants' invention (as mere combination would not provide the claimed invention). The only teaching of imprecise input data is provided in Appellants' specification, and this teaching cannot be the source of the motivation to combine the references or to modify them to process imprecise records. The reason for combining the references provided by the Examiner at the top of page 3 is because it "would have given those skilled in the art an efficient tool to identify candidate data from a variety of associated databases in regards to data transaction. This gives users the advantage value of efficiently determining record data via data from transaction information faster." This statement fails to indicate that either reference was attempting to solve the problem of imprecise data needing to be resolved and the fact that imprecise data may lead to more than one match or record being identified that may require lexical matching or scoring algorithms to resolve. Appellants assert that without their own teaching there is no motivation to modify either of the references to address problems with imprecise identification data in transactional records. Without such motivation, the combination of the two references is improper and any rejections based on the references should be withdrawn. The Response to Arguments failed to address this argument of lack of motivation as required to combine the teaching of two references under 35 U.S.C. §103.

For all these stated reasons, Appellants request that the rejection of claim 33 based on Shaffer and Mikurak be withdrawn, and claim 33 and claims 34-36 and 45-49, which depend from claim 33, be allowed with claims 34-36 and 45-49 being allowable at least for the reasons for allowing claim 33 and claims 46-49 being allowable for the additional reasons provided above.

Turning now to claim 1, this claim calls for, among other things, transaction data related to a channel participant. Appellants have argued in several amendments, and continue to maintain, that Schaffer does not show transaction data. As discussed in the final two Amendments, the Office Action states that the linkage key contains the ability to process transactions. However, "containing the ability" to perform a claim limitation is not a proper standard under 35 U.S.C. 103. Moreover, the linkage key does not relate to any particular transaction. The linkage key is provided explicitly by a customer or derived from information

provided by a customer such as the LKIPV and does not come from a transaction nor is it related to a transaction (i.e., the LKIPV is not transaction data). The Examiner has never addressed these comments in any of the Office Actions to date nor is this basic difference between Shaffer and the system of claim 1 discussed in the Response to Arguments of the two most recent Office Actions. The February 9, 2007 Office Action cites Shaffer at paragraphs [0061] and [0116] for this limitation of claim 1. However, paragraph [0061] discusses a merchant can be provided with "median income data, property value data, census data, business and government location data, and other data related to the spatial location of the consumer." Paragraph [0116] discusses an identification string. None of this information teaches "transaction data related to at least one channel participant" (e.g., see Figure 2 for examples of transaction data). For this reason alone, claim 1 is not shown by Shaffer, and Mikurak is not cited to, and fails to, overcome this deficiency.

Further, claim 1 calls for a candidate identification mechanism for "determining more than one candidate reference record from one of the reference record databases using spatial and business data derived from the transaction data." Shaffer fails to show such a candidate identification mechanism. The Office Action agrees that Shaffer does not show this mechanism, but it cites Mikurak for overcoming this deficiency of Shaffer. As discussed with reference to claim 33, the citations of Mikurak do not appear to provide any discussion or teaching of a candidate identification mechanism that uses "spatial and business data derived from the transaction data" to determine more than one candidate reference record. Appellants requested that the Examiner withdraw the rejection or provide a citation that shows Mikurak teaches identifying multiple candidate records using both spatial and business data, but no citation was provided and the rejection was maintained.

Shaffer does not entertain the concept of more than one candidate record. Shaffer teaches that an identifier will unambiguously point to a single, specific database record in any given database. In fact, Shaffer's system would fail if the identifier pointed to more than one record. One example of where Shaffer's method would fail is multiple businesses residing at the same address (such as in the same office building). In this case, each business would have the same spatial identifier (and hence be ambiguous) until subsequent lexical or other non-spatial

matching techniques were applied. In contrast, the invention of claim 1 recognizes that in real-world situations transaction data is often ambiguous. The invention of claim 1 allows for identification of more than one candidate record.

Further claim 1 calls for a matching mechanism that is used to match a subset of the candidate records (e.g., one candidate record) to the transaction data. Shaffer and Mikurak do not need to, and do not, use a matching mechanism for this purpose and if their teaching is combined, the system of claim 1 is not achieved. The Office Action cites to Shaffer at paragraphs [0061], [0149], and [0064] for teaching this matching mechanism for matching a subset of the candidate records to the transaction data. In paragraph [0061], Shaffer states that an identifier can be used to provide data to a merchant server, but there is no discussion of matching a subset of candidate records to transaction data (i.e., where is a first identification of a candidate set of this data and then a matching of only a subset of this data?). In paragraph [0149], Shaffer teaches using a "DUNs'" number to access a corporate database to "obtain names of corporate officers and credit history information." This fails to teach taking a set of candidate reference records and determining a matching subset of them to match to transaction record (i.e., the names and credit history is retrieved but there is no processing to narrow the retrieved information to a subset of data that better matches some criteria or, in this case, better matches transaction data). In paragraph [0064], Shaffer teaches the forwarding of retrieved information to a second merchant server but, again, there is no discussion of matching or selecting a subset of such information to better match some criteria such as a transaction record. Since Shaffer also fails to show the matching mechanism of claim 1 and Mikurak is not cited to and does not overcome this deficiency, claim 1 is believed allowable over Shaffer and Mikurak for this additional reason.

Claims 2-17, 40, and 41 that depend from claim 1 are allowable for at least the same reasons as provided for allowing claim 1 over these two references. Further, Shaffer does not show or suggest lexical matching as called for in claims 13-15. Shaffer is cited again at paragraphs [0061] and [0116] for teaching the claimed lexical matching. However, the cited portions of Shaffer have nothing to do with lexical matching. Paragraph [0061] discusses providing a set of data to a merchant server and paragraph [0116] discusses an identification string to a requested image. Clearly, neither of these paragraphs teaches nor even suggests the

lexical matching of claims 13-15. The Response to Arguments in the September 9, 2006 Office Action provided no rebuttal to this argument, and Appellants requested that the Examiner reconsider the rejection of all claims that combine spatial matching with lexical matching because no reference to date has shown such a combination. The more recent February 9, 2007 Office Action briefly states in the Response to Arguments that Shaffer and Mikurak in combination show a lexical element but fails to provide a specific citation to which component in the references shows this element. Appellants also encourage the Examiner to reread paragraphs [0028] and [0029] of Appellants' specification for an explanation of lexical matching that may be used as called for in claim 13 to narrow a list of candidate reference records down to a subset that may be matches for a transaction record.

The combined use of spatial and lexical matching to resolve imprecision or to better match transaction data has proven very effective for Appellants and has resulted in significant acceptance of their product in the marketplace. As a result, Appellants added independent claim 42 that combines the imprecise identification feature called for in claim 33 with the combination of spatial matching with later lexical matching as called for in claim 13. Hence, the reasons provided for allowing claims 1, 13, and 33 are all believed applicable to claim 42. The Office Action rejected claim 42 for the reasons provided for rejecting claims 1-4 and 6, but this indicates that the additional lexical matching was not examined or given proper patentable weight. Hence, Appellants request that the Examiner's rejection be overturned because it fails to state a proper prima facie case of obviousness and because even if the reasons for rejecting claims 1, 13, and 33 are combined, the two cited references fail to show all the limitations of claim 42. Claims 43 and 44 depend from claim 42 and are believed allowable at least for the reasons provided for allowing claim 42.

Further, the portions of Shaffer cited in the Office Action do not show or suggest the selection process as called for in claims 16-17, which depend from claim 1 (i.e., paragraph [0120] discusses the identifier string and cookie data files but nothing about lexical matching and a selection process based on lexical matching and corresponding scores; paragraph [0122] discusses consumer telephone numbers and income levels; and paragraph [0182] discusses

geodemographic systems). Hence, claims 16-17 are believed allowable over Shaffer and Mikurak for these additional reasons.

Rejection of Claims 40 and 41 Under 35 U.S.C. §103 is Improper

In the Office Action of February 9, 2007, claims 40 and 41 were rejected under 35 U.S.C. §103(a) as being unpatentable over Shaffer in view of Mikurak and further in view of U.S. Pat. No. 6,523,027. This rejection is traversed based on the following remarks, and Appellants request that the rejection be reversed as not properly supported.

Claims 40 and 41 depend from claim 1, and these claims are believed allowable over Shaffer and Mikurak at least for the reasons provided for allowing claim 1 over these references. Further, claim 40 calls for a learning database mechanism that is operable to hold records that create associations between information within transaction records that could not automatically be matched with reference records (e.g., a common misspelling or a tradename or DBA for a company that is identified as correct for matching purposes). Claim 41 depends from claim 40 and further calls for the learning database to be populated based on analysis of transaction records that require manual intervention to obtain the association with a reference record. The Office Action notes that Shaffer fails to show such a learning database, but the Office Action cites Underwood for teaching learning libraries. From Appellants' review of Underwood, Appellants did not identify learning libraries at the cited Figure 17A component 1704 or at col. 14, lines 2-30. Further, Underwood does not show learning libraries that are "operable to hold records that create associations between information within transaction records that could not be automatically matched with reference records and the desired reference record." In other words, a proper reference would need to not only show a learning library but also the specific type of learning library called for in claims 40 and 41 (with claim 41 requiring manual intervention to create the association of claim 40). Accordingly, claims 40 and 41 are allowable not only for the reasons stated in reference to claim 1, but also because Shaffer and Mikurak in view of Underwood do not teach the additional limitations of these claims.

Conclusion

In view of all of the above, all the pending claims are believed to be allowable and the case in condition for allowance. Appellants respectfully request that the Examiner's rejections be reversed for all the pending claims.

Respectfully submitted,

Date: February 27, 2007

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VIII. CLAIMS APPENDIX

1. A system for managing a product distribution channel having a plurality of channel participants, comprising:

one or more reference record databases;

one or more reference records within the reference record databases, each reference record providing an association between business information and spatial data for a specific channel participant;

transaction data related to at least one channel participant;

a candidate identification mechanism for determining more than one candidate reference record from one of the reference record databases using spatial and business data derived from the transaction data; and

a matching mechanism for matching a subset of the candidate reference records to the transaction data.

2. The system of claim 1 wherein at least one channel participant comprises a consumer of the product who receives the product from the distribution channel.

3. The system of claim 1 wherein at least one channel participant comprises a producer of the product who places the product in the distribution channel.

4. The system of claim 1 wherein at least one channel participant comprises a distributor of the product who receives the product from a producer and distributes the product to a consumer.

5. The system of claim 1 wherein at least one channel participant comprises a reseller such as a dealer, agent, branch, and the like.

6. The system of claim 1 wherein the candidate identification mechanism further comprises a geo-coding mechanism operable to determine street-level spatial data from the transaction data.

7. The system of claim 1 wherein the candidate identification mechanism determines postal code information from the transaction data.

8. The system of claim 1 wherein the candidate identification mechanism determines location information from the transaction data.

9. The system of claim 6 wherein the candidate identification mechanism further comprises a selection mechanism for retrieving records that have spatial data substantially matching the spatial data obtained from the transaction record.

10. The system of claim 9 wherein the reference record comprises:

a reference identifier identifying the channel participant;

a business name; and

spatial information with predetermined accuracy.

11. The system of claim 10 wherein the predetermined accuracy is street-level accuracy.

12. The system of claim 10 wherein the predetermined accuracy is postal accuracy.

13. The system of claim 9 wherein the matching mechanism further comprises:

a lexical matching process operable to correlate non-spatial data in the transaction record with non-spatial data in the candidate reference records.

14. The system of claim 9 wherein the matching mechanism further comprises:

a lexical matching process operable to correlate spatial data in the transaction record with spatial data in the candidate reference records.

15. The system of claim 13 wherein the lexical matching process generates a score for each candidate reference record.

16. The system of claim 15 further comprising:

a selection process operable to select a candidate reference record based on the generated score exceeding a pre-selected threshold value, wherein the selected candidate reference record provides a precise identification of the at least one channel participant related to the transaction data.

17. The system of claim 16 wherein the selection process makes automated assignments to select candidates when the scores exceed a predetermined high threshold.

33. A method for identifying distribution channel participants comprising:

generating a transaction record comprising data that imprecisely identifies at least one channel participant;

geo-coding location data within the transaction record to determine a spatial identifier for the transaction record;

providing a reference record database comprising a plurality of reference records where each reference record comprises business information having greater precision than the transaction record and each record is associated with a spatial identifier; and

identifying more than one reference record in the reference record database by matching the spatial identifier of the transaction record with spatial identifiers associated with reference records.

34. The method of claim 33 wherein the at least one channel participant is an end customer.

35. The method of claim 33 further comprising:

applying non-spatial matching processes to select one of the reference records and using the selected reference record to precisely identify the at least one channel participant.

36. The method of claim 33 further comprising:

using the one or more identified referenced records to attribute transactions to another channel participant, wherein the transaction record itself is has insufficient precision to accurately attribute the transactions.

40. The system of claim 1 further comprising a learning database mechanism operable to hold records that create associations between information within transaction records that could not be automatically matched with reference records and the desired reference record so that subsequent transaction records can be matched with the desired reference records using the association provided by the learning database.

41. The system of claim 40 wherein the learning database is populated based on analysis of transaction records that require manual intervention to be associated with the desired reference record.

42. A computer-based method for resolving ambiguous transaction records, comprising:

storing reference records in memory that each provide an association between business information and spatial data for a distribution channel participant, the spatial data including a geocode; and

with a resolver mechanism running on a computer having access to the memory, receiving a transaction record comprising transaction information and location information, wherein the transaction information includes an imprecise identification for one of the distribution channel participants associated with the stored reference records preventing a direct match with the business information of the one distribution channel participant to be made with certainty;

operating the resolver mechanism to parse the location information in the transaction record and generate a geocode based on the parsed location information;

comparing the generated geocode with the reference record geocodes to select one or more candidate reference records from the stored reference records;

performing lexical processing of the imprecise identification for one of the distribution channel participants with reference to the business information in the candidate reference records; and

based on the lexical processing, matching the received transaction record to one of the candidate reference records.

43. The method of claim 42, wherein the geocodes comprise a value corresponding to a latitude and longitude location.

44. The method of claim 42, further comprising providing in memory a learning library comprising a set of previously received imprecise channel participant identifications and a matched one of the stored reference records and wherein the method further comprises prior to the matching based on the lexical processing comparing the imprecise identification for one of the distribution channel participants with the set of previously received imprecise channel participant identifications and matching the received transaction record when a match between the identifications is determined.

45. The method of claim 33, wherein the transaction record includes information that identifies an entity in an imprecise manner that makes accurately matching of the transaction record to one of the reference records uncertain.

46. The method of claim 45, wherein the information in the transaction record comprises an identifier of an entity that includes a typographical error or another identifier not matching an entity identifier in the reference records.

47. The method of claim 45, wherein the information in the transaction record comprises business name or address information that does not match any business entity data in the reference records.

48. The method of claim 47, wherein the greater precision information in the references records includes as least a portion of the business name or address information in the transaction record that cannot be matched in the reference records.

49. The method of claim 45, wherein the information in the transaction record comprises an entity identifier for the entity that matches an entity identifier in the reference records and further includes location information that differs from location information in the reference records for the matched entity identifier, whereby imprecision in matching is introduced.

IX. EVIDENCE APPENDIX

No copies of evidence are required with this Appeal Brief. Appellants have not relied upon any evidence submitted under 37 C.F.R. §§ 1.130, 1.131, or 1.132.

X. RELATED PROCEEDINGS APPENDIX

There are no copies of decisions rendered by a court or the Board to provide with this Appeal as there are no related proceedings.